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Governor of Louisiana

F. L. CLEMENT
Director

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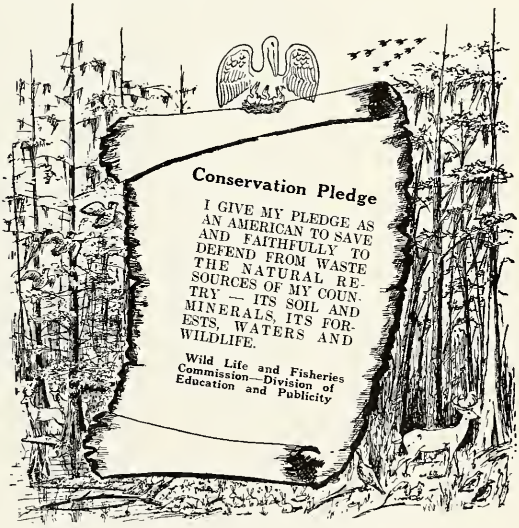

Conservation Pledge

I GIVE MY PLEDGE AS AN AMERICAN TO SAVE AND FAITHFULLY TO DEFEND FROM WASTE THE NATURAL RESOURCES OF MY COUNTRY — ITS SOIL AND MINERALS, ITS FORESTS, WATERS AND WILDLIFE.

Wild Life and Fisheries Commission—Division of Education and Publicity

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EDITORIAL

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COVER

Muskrat in native habitat

PHOTO BY BLACKWELL

By F. LAMAR CLEMENT, *Director*

Louisiana Wild Life and Fisheries Commission

ARE we truly interested in the conservation of our natural resources, our wildlife, and the heritage that is every American's . . . to enjoy the fields and streams, the hunting and fishing, the happy hours in the outdoors that every American boy is being told is part of his birthright? Weldon F. Heald, in "The Living Wilderness", has summed it up in dramatic manner like this:

"I love thy rocks and rills, thy woods and templed hills." So runs one of our most popular national songs.

I have seen Americans stand and sing "My Country 'Tis of Thee" with tears of emotion in their eyes and selfish exaltation in their bearing.

But I just don't believe it.

The more I see of our blasted rocks, dammed rills, cut and burned woods and bulldozed hills the more convinced I am that the average American has no consideration for them whatsover. Or if he does, he seems apathetically unmoved by the destruction around him.

We love wealth, prosperity, and growth. We take pride in a high standard of living. We thrill to automatic gadgets, deep freezers, and jet planes. We boast of a mechanical, electrical, atomic civilization wrapped up in a package labelled, "Liberty, Democracy, and the Pursuit of Happiness . . . Handle with Care" there may be a superstreamlined Frankestein inside. But God bless America. We love it.

However, there is another America. It is under our feet. It is around us. It is the land we live on . . . the forest, hills, valleys, mountains, and deserts we took from the Indians.

Do we love this America too? Well, maybe. But it looks to me as if we were so dissatisfied with its general appearance and arrangement that we are trying to change everything about it in the shortest possible time.

F. LAMAR CLEMENT

For, all over the country powerful interests, representing themselves as the majority, are closing in, bent on despoiling and obliterating every last vestige of original America. Although national parks preserve less than one percent of our land in primeval condition, giant dams are proposed for four of them, and lumbermen demand the finest forests in a fifth. National forests provide less than one percent of the nation's cattle-feed requirements, yet embattled stockmen are asking for the forests as their private preserve. Miners and sheepmen want the national monuments. State parks are succumbing to commercial interests. Marshes are drained, lakes emptied, and predators exterminated so that wildlife suffers from unbalance. Each year thousands of acres of timber are indiscriminately hacked and burned, the range is depleted, soil exhausted, erosion accelerated, streams polluted, air contaminated.

Truly, this is a love that passeth understanding!

Years ago Americans who valued this original America became alarmed at the rapidity with which it was disappearing. They started a movement for the preservation of natural resources, both economic and scenic, which has ever since been known as Conservation. From it has grown the national parks, national forests, national monuments, the state parks and all other attempts to preserve some of our national heritage for the use and enjoyment of Americans who love, value, and appreciate the land they live on. Today, there are thousands enlisted in the battle to preserve the resources and character of our country. But they are still woefully in the minority.

The front-line minutemen of the revolution fought at Lexington and Concord for the America they loved. Those historic patriots won against great odds. It can be done again. But don't wait for orders. Start firing NOW! Join the present-day minutemen by thinking, talking, reading, and spreading the importance of Conservation.

God bless America. . . and let's save some of it.

(U. S. Forest Service Photos)

The hardwood forest is rarely faced with scarcity of browse, good trees or game dens.

Hardwood Management For Game

By Howard A. Miller
U. S. Forest Service

HARDWOODS comprise better than half of the commercial forest acreage found in the South. Particularly important to game, the forests are well distributed, occurring on rolling hills, flatlands, stream bottoms and mountains. On the average about one-fifth of the upland hardwood forest is found in minor stream bottoms, thus offering a wide selection of sites for management, not only within the hardwoods but as interspersed habitat within the pine forest.

Depletion, however, of southern hardwoods has gone so far in many instances that protection from fire and overgrazing alone is not sufficient to enable the stand to build up and attain optimum habitat and volume growth in any reasonable time. Regrettably, from 30 to 40 percent of the growing stock on upland sites is in cull trees. Before systematic management can begin, the stands must be rid of culls and non-merchantable trees which usurp growing space from thrifty young trees and suppress important browse and game food plants. To adjust composition and improve habitat, planting may be required.

Fortunately, there is little compromise required for a coordinated program of game and hardwood forest management. Upland tree species of value to the trade, as well as to wildlife, are white and red oak, blackgum, cherry, hickory, poplar, and dogwood. In the bottomlands, cherrybark, Nuttall's and willow oak, hackberry and persimmon are important game, lumber and veneer species.

Hardwood forests are rarely faced with a scarcity of food trees or game dens. In upland forests, however, there may be critical shortages in the understory and ground cover due to site deficiencies, rate of growth and stocking which, if not solved, can defeat or at best greatly retard a wildlife program.

Ridges and dry slopes where site class drops between 40-50 feet might better be converted to pine rather than attempt to continue slow growth, short-bodied hardwoods. Studies at the Tallahatchie Experimental Forest, Mississippi, indicate the suitability of loblolly pine for these plantings. Nickey Brothers Lumber Company has converted a sizable acreage of ridge type in Tennessee to loblolly. The interspersion of pine through the hardwood forest provides a multiplicity of winter cover and game food, and on poor hardwood sites should produce more attractive financial returns from the future sale of forest products.

Poor sites furnish little food in the ground cover for turkey and growth of the understory is so slow that browse species normally taken by deer are unpalatable. There are no indications that a reduction of basal area will render sufficient increase in growth rate to make browse palatable.

There are many examples of national forests and industrial forests where silvicultural prescriptions in upland hardwoods have resulted in improving habitat for wildlife. In general, they follow the same pattern of removing undesirable growing stock and cull trees, thus stimulating growth on crop trees and improving forage and ground cover food plants.

On the Sylamore District of the Ozark National Forest, in Arkansas, an average upland hardwood forest, stand improvement prescriptions were carried out in 1934-'35. The general character of the prescription was to free desirable growing stock from overstory culls, thus to improve the composition and quality of the remaining growing stock. At the same time considerable overstory cull was left for game food and white oak seed. Fiifteen years later the understory of the treated stand had increased fifty percent in basal area over that of the untreated stand. The cull component was less than eight percent of the total basal area as compared to the untreated forest where the cull component was found to represent one-fourth of the stand.

Interpreting the results of this prescription in terms of habitat improvement, it can be observed that first, browse quantity was increased by the removal of overtopping undesirable growing stock. Second, the cull left for seed trees and game did not adversely affect the future stand and no doubt it could be eliminated at this time. Third, the present forest resulting from the treatment is more attractive to wildlife than the untreated sand, although at the time of treatment the game values may have been lowered. Robert L. Dunkeson reports that in the Missouri Ozarks, deer can usually find good browsing on released plants for eight years or more after an improvement cut similar to the Sylamore prescription.

A corresponding operation has been carried out on lands of the Bemis Hardwood Lumber Company in the Snowbird Mountains of North Carolina. The general prescription of removing undesirable growing stock was followed as far as possible, yet leaving sufficient den and seed trees of desirable species. There has been no evidence of a noticeable decrease in game following the treatment.

Southern bottomland hardwoods have their greatest concentration in the Mississippi River delta. In the aggregate, however, there is more bottomland forest acreage outside the delta, since the type occurs on every major stream and minor ones from Virginia to Texas. In addition to supporting the same game species as upland types, bottomland forests are attractive to waterfowl—not only because of the many lakes and sloughs found along the rivers but more important, the presence of oak mast made available for waterfowl food during overflow periods.

Each major site in the bottomlands supports important game food tree species as well as ground cover food plants. On terraces fast growing cherrybark, southern red and water oaks, hickory, and blackgum provide the overstory. Typical ground cover plants are smartweed, grape, blackberry, and panic grass. Characteristic first bottom tree species are Nuttall's oak, persimmon, and hackberry, under which are found wild millet, crabapple, feathergrass and poison ivy fruits.

Typical abused bottomland hardwoods have the same characteristics found in other hardwood forests; namely, a preponderance of undesirable growing stock and cull trees. Almost half of the average forest stand is composed of cull and undesirable growing stock. Fortunately, however, if stand improvement measures are carried out, recovery is quicker than on upland sites due to more rapid growth. Probably the most discouraging feature of this highly important wildlife type is the speed with which it is being converted to agricultural usage and destroyed by impoundments constructed for flood control and hydroelectric power. The Forest Survey reveals that within the past 20 years delta forest land area has declined twelve percent. The impact of the permanent loss of this valuable game type far exceeds any temporary loss of habitat occasioned by stand improvement cutting in it, or other southern forest types.

Since the majority of bottomland forests are being managed for such end products as factory grade sawtimber and veneer, there is little, if any, compromise to be made in favor of game. The ultimate crop tree under this management is a rugged, aristocratic individual, and the most valuable product of our southern forests. Large diameter, full crowned trees left standing for production of high quality veneer provide ample food spots for deer, turkey, and squirrel. Selective cutting rarely heavier than 40 percent of the gross volume develops the canopy sufficiently to stimulate desirable ground cover food plants and forage.

Due to upstream flood control measures on many of the major rivers, the occurrence of annual overflow has been greatly decreased. This situation has caused loss of waterfowl range, but appears to have resulted in upgrading first bottom sites as prolonged overflow adversely affects reproduction of such desirable species as willow, cherrybark, and Nuttall's oaks. Waterfowl, however, can be attracted by use of green tree reservoirs which not only will furnish good hunting, but fireproof the forest as well during the period of flooding.

Even though the wildlife value may be temporarily reduced, present forest habitat should be improved by release of desirable crop and food trees.

Looking at southern hardwood forests in general, there are a number of corollary steps to be given consideration where a coordinated game and forest program is to be conducted. Protection must be afforded against fire, overgrazing, and illegal hunting. No forest habitat, regardless of the quality, can produce satisfactory numbers of wildlife if protection against illegal hunting is not provided. Livestock, particularly hogs, compete directly with wildlife for desirable food plants and forage. If other than light grazing of cattle need be carried on in the interest of public relations, then the carrying capacity for wildlife may be expected to be reduced.

Present forest habitat should be improved by release of desirable crop and food trees, even though the wildlife value may be temporarily reduced. If the reduction is of serious proportion, consideration should be given to providing supplemental food by use of agricultural food plots.

Lack of water can be a critical factor on dry ranges, and provision should be made for water holes on ridges, especially where management is directed toward wild turkey.

Multiple game species management will find most attractive forest habitat where the end product of the forest is factory grade sawtimber and veneer. Cutting cycles of ten

(Continued on Page 24)

Seek Answer to Wildlife Decline!

Presiding over an open forum to discuss problems of damage done to seafood industries by industry and oil exploration were, left to right: James M. McConnell, Wild Life Commissioners Ray Whatley and John Cutrone, Wild Life and Fisheries Director F. Lamar Clement, Commissioner Raleigh J. Pitre, and State Minerals board oyster committeemen H. P. St. Martion, Jr., Warren J. Harang, Jr. and John A. Smith, Jr. Addressing the forum is Kenneth E. Biglane, Wildlife commission's Chief of Water Pollution control.

More than two hundred persons representing the commercial fishing, shrimping, oyster and fur industries met at the Monteleone hotel recently with representatives from the oil, sulphur, gas, pipeline and allied industries for an open forum to discuss problems concerning damage done to their industries by oil exploration and industrial expansion in the coastal parishes.

Director F. Lamar Clement of the Louisiana Wild Life and Fisheries commission, who called the meeting, told the gathering that the get together was of an exploratory nature to determine just what can be done to alleviate the "almost critical" status of the fishing and trapping industry.

Rep. Alvin Dyson and H. Ray Robinson . . . "the fur and shrimp industry have many complaints . . ."

James McConnell, Chief of the Oyster, Water Bottoms and Seafood division of the commission said that he hoped that the meeting would be followed by others and that the two sides should be able to work out their problems without controversy.

Presiding over the meeting on the panel representing the commission besides McConnell and Director Clement were Commissioners John Cutrone and Ray Whatley and Raleigh J. Pitre; representing the oyster committee of the State Minerals board were John A. Smith, Jr., Warren J. Harang, Jr., and H. P. St. Martin, Jr.

H. Ray Robinson, chairman of a special committee of the Shrimp Canners association and a representative of the shrimp canning industry, summarized various complaints of the shrimp industry in this way:

1. Louisiana's annual shrimp catch has dropped from 81,000,000 pounds in 1953 to 55,500,000 in 1956.
2. The forces of nature are partly responsible for the decrease.
3. Malpractices followed by the shrimp industry itself have been partly responsible, but "We are now cleaning up our own house."
4. So-called sports fishermen are operating commercial ventures under the guise of sport and taking almost unlimited quantities of shrimp.
5. Oil, gas, pipe line and related industries have brought about vast ecological changes along the coastal areas leading to the depletion of the shrimp supply.

Robinson said the most serious effect of oil exploration of the Gulf on the shrimp industry has been the intrusion of salt water into marshland areas, resulting from the digging of networks of canals in connection with oil operations.

Shrimp, he said, need fresh water to grow. And the marshes are no longer holding fresh water because of the drainage brought about by the canals.

Robinson said that explosives used in oil exploration, the damage to water bottoms by the spreading of drilling mud, and the disposal of toxic and radioactive type chemicals in the Gulf by careless operators were contributing factors in the decline of the shrimp industry.

"Young shrimp depend on the vegetable growth of the bottoms and the other marine animals who thrive in them for food. When these bottoms become covered with oily drilling mud, this food supply dies off and so do the shrimp.

"The Gulf of Mexico is a mighty big place and industries have plenty of space to dump their chemicals, but when a fisherman picks up a drum or two of toxic chemicals in his trawl net not far from shore it is obvious someone is getting careless about disposal."

Louis Battistella, president of the Louisiana Oyster Dealers' and Growers' association seconded the remarks of Robinson and said, "When oil-impregnated drilling mud and sand gets into the gills of the oyster they become definitely unpalatable and unsaleable." Baldo Pausina, called upon as a member of the oyster fishermen's committee, said that the law on oyster leasing was changed in 1950 "just by accident." He said that under the 1950 law the same areas are being leased to oil companies. "After the oysterman has laid down his beds in selected areas under lease from the state the oil companies come in and cut the reefs up, release refuse chemicals and oil and also dredge canals which let the salt water in. Oysters must have fresh water in which to grow and chemicals which affect the shrimp also affect the oysters, only the oysters cannot move away," Pausina said.

Concerning section 421 of the Louisiana laws pertaining to oysters and water bottoms Pausina pointed out the way the 1950 law now reads and the way the 1943 (R.S. 56:421 through 449) then read.

The old law read, Pausina pointed out "Nothing in this act shall be so construed as affecting in any way the leasing of said waters for mineral purposes under the provisions of Act No. 30 of the Legislature of 1915 providing that if the mineral rights on any water bottom previously leased for oyster culture are granted by the state it shall be done only with the written consent previously obtained of the lessee of such water bottoms for oyster culture purposes, or by previous compensation, of adequate amount paid to said oyster lessee by said mineral lessee for any and all damages sustained by said oyster lessee . . ."

Lloyd Abadie . . . "The Wildlife Federation promises its full cooperation . . ."

Under the 1950 law, the whole of the above paragraph has been omitted and the law now reads "Nothing in R.S. 56:421 through 56:449 affects in any way the leasing of the waters for mineral purposes. "In other words," Pausina said, "now the same areas leased to oystermen are being leased to the oil companies also."

Following the oysterman's remarks, McConnell urged any

Dr. Lyle St. Amant . . . "If we give up this area we'll be giving up an area that will give us food for years."

Harvey I. McGinnis, ". . . small menhaden have to have clean fresh water too . . ."

oil and gas men to take the platform on their behalf but none responded, and, concerning this reluctance to enter the forum, Times-Picayune sports columnist MacFadden Duffy wrote in his column under a caption "Strong but Silent" the following:

"Readers of "All Outdoors" have been kept posted on the corrective measures planned by the Louisiana Wild Life and Fisheries commission to bring the state back from a precarious third rate producer of shrimp to the nation's leading state. Oyster yield has dropped almost in proportion to the shrimp production. There are ecological factors involved and there are also mal-practices in the various industries operating in the Louisiana marshes. No fingers are being pointed just yet, but one thing that has caused a great deal of concern among all interested persons, ranging from commercial fisheries folks to sportsmen, is the fact that oil and gas interests (financially strong but strangely silent) were represented but inactive at the mass meeting held last Friday by the Wild Life commission at the Monteleone hotel.

"There were representatives of the oil and gas industries and operators present at the meeting but they were listening. Louisiana oyster and shrimp industry interests last Friday charged that oil and gas industry activities were affecting them adversely. The late Arthur Van Pelt, outdoor columnist for the Times-Picayune for many years, spoke boldly for years about salt water intrusion and the consequent results to Louisiana's production of seafood and furbearing animals. For many years, he was a voice crying in the wilderness. Now that he is gone, his prophecy becomes increasingly clear. You can't turn 'sweet water marshes,' as he called them, into lacelike canals pulling salt water into those marshes without upsetting the balance of nature.

Baldo Pausina . . . "They 'accidently' changed the law . . ."

Leo W. Spath . . . "We close oysters beds as a matter of public health—not to work hardships . . ."

"The oil and gas industries, or their representatives, were quite silent at the mass meeting intended to bring about a meeting of the minds on ecological problems confronting Louisiana. Granted, oil and gas operations are vital in Louisiana's economy; but the fur, shrimp, oyster and sport fishing interests have had more than a fair dose of salts."

State Representative Alvin Dyson of Cameron parish said that his district had been severely hit by ten years drouth and that the fur industry there was already suffering when hurricane Audrey struck. He said that the oil and gas industry has also inflicted damages on the trapping lands but that "we need both the oil-gas and fishing-trapping industries."

"If it were not for the oil and gas industries we would be in a bad fix in South Louisiana today," he said. However Dyson recommended that industries digging canals be required to erect protection levees to prevent the intrusion of salt water into the marshlands.

Leo E. Kerner of Lafitte, representative of the Louisiana Farm Bureau Federation, said that soft-shell crab fishermen in Lake Salvador were being hampered again this year by shell dredging operations and he asked that the commission ban shell dredging operations on the lake from March through October. In reply McConnell assured Kerner that if he would come in to his office at the commission with his complaints the situation would be corrected immediately.

Kenneth Biglane, Executive Secretary of the state Stream Control commission and Chief of Water Pollution control for the Wild Life and Fisheries commission said that stream pollution control research was a neglected field and that industry should spend more money on it. "We are dragging our feet insofar as pollution control research is concerned," he said.

Dr. Lyle St. Amant, research biologist for the Oysters, Water Bottoms and Seafood division of the commission, said that his section had investigated more than 100 complaints of oystermen against oil and other industries last year.

"Louisiana is blessed with more than 5,000,000 acres of coastal marshlands. If we give up this area, we'll be giving up an area that will give us food for many years.

"My section is charged with the technical investigation of oyster problems," St. Amant said. "In such a capacity we are expected to find means to protect oysters or prevent damage from occurring. If damage does occur we then examine the area in question and prepare the necessary reports. In the past year and a half we have handled over a hundred cases. Percentage wise the various problems encountered were seismic 13%, silting and dredging 41%, oily taste in oysters 15%, ecological changes 6%, marsh buggy damage 5% and disease and unknown causes 20%.

"Direct oil contamination is usually due to spillage, line breakage, and carelessnesses around drilling rigs. Accidental pollution is to be expected on occasion but in our experience too many cases are caused by direct disregard of rules governing oil field waste disposal. Such direct oil pollution can and does cause oily taste in oysters. This occurs when oil is *adsorbed* on silt particles suspended in oily water." *(Adsorption* means the adhesion, in an extremely thin layer, of the molecules of gases, or dissolved substances, or liquids to the surfaces of solid bodies with which they are in contact: —as distinguished from *Absorption*.)

"Of more serious consequence, is pollution with oil emulsion based mud. This material often containing as much as 1.4% oil in emulsion form sinks to the bottom easily and may contaminate an area for as long as one year. It is against coastal waste control regulations to allow any of this material or oily well cuttings to escape into surrounding waters. Direct disregard of the rules governing disposal, or carelessness in handling this oily mud has been the direct cause of most oily taste problems.

"The biggest problem faced by the oyster industry on the coast is the rapid ecological changes which are taking place in our coastal area. Some of these changes are natural or have resulted from longstanding practices such as flood control on the lower Mississippi river, the cutting off of distributaries of the river, and the dredging of deep water navigation channels. Super-imposed on this is the ever increasing system of canals and spoil levees being constructed to serve the oil industry. Such canals short circuit the old meandering water ways, and change the direction and velocity of current flow. This results in greatly increased salinities in some areas and silting from reduction in current velocities. Spoil levees also greatly disrupt fishery navigation. Direct physical damage to leases and natural oyster reef also results from dredging and silting.

"Certainly these ecological changes should be curtailed or stopped if possible. If not, the production of Louisiana marshes in oysters, shrimp, fish, and fur can be expected to decline further. The great value of this marsh area to the State of Louisiana makes it mandatory that something be done immediately.

"Seismic operations cause a considerable number of problems. Extensive shooting causes disturbance to bottoms and fish in the area. Excessive boat and marsh buggy activity in restricted shallow bays actually destroys oysters and oyster reefs. There is also evidence that marsh buggy activity in boggy marsh areas near shore may result in damage. Cut up marsh grass and rotten marsh may float into the bay at high tides later to settle on oyster reefs.

"In final analysis we have found that problems of all types are fewer when the companies planning to operate in the coastal area check with us in advance in order to find the safest way to go about construction," St. Amant said.

Jack Hood, of the commission's coastal waste control division, said that most of the oil companies are "cooperative in attempting to prevent waste from polluting fishing waters, however, there are certain ones who do not cooperate or who cooperate only as long as vigilance is exercised. "When we let up they start all over again. However, this minority of offenders cannot be properly patrolled because of a lack of sufficient personnel to cover the area," he said.

Leo W. Spath, of the Pure Foods and Drugs division of the State Board of Health, said that his department had closed down certain oyster bed areas because of pollution and that this was not done to work a hardship on the oystermen but rather to help them. "We check the oyster beds for contaminated and polluted oysters and close off those beds as a a matter of maintaining public health, however, in so doing we help the oystermen because otherwise they would be selling contaminated oysters to the public without knowing it and would only hurt themselves by throwing a scare into the market," he said.

Chief McConnell and Director Clement . . . "problems can be worked out to mutual interests . . ."

Harvey I. McGinnis, representing the menhaden industry said that his industry was working in one hundred percent cooperation with the commission through mutual agreements, however, he seconded Dr. St. Amant's statement in saying, "We must also remember that small menhaden, like shrimp, have to have fresh waters with food growing bottoms in order to survive and produce for the seafood industry."

Roy T. Sessions, of the Freeport Sulphur company, joined the menhaden group in reporting that "his people got along perfectly with the commission because their operations were planned before hand with them." "We have absolutely no complaint to make," he told the group.

Lloyd F. Abadie, President of the Louisiana Wildlife Federation, who spoke in the absence of Charles Bosch, Secretary of the organization who was scheduled to speak on the agenda but who did not attend because of illness, had no answer to make concerning Robinson's charges against the "sports fishermen" other than to pledge the organization's "full cooperation with all concerned."

In closing the meeting, Director Clement thanked the audience for its splendid interest and cooperation and said that he hoped that this initial meeting would be the forerunner of others to come at which problems could be worked out to mutual interests.

FUTURE OF BOBWHITE LOOKS BRIGHT!

A new record in quail egg production has been set by "Virginia," a little quail hen at the State quail farm at Tyler, Texas.

"Virginia" laid 332 eggs in 12 months. She surpassed the record of 311 eggs produced by her mother "Bernice," during the previous year.

This performance record placed "Virginia" at the top of all state personnel. She missed only 33 days of production, which means she even worked on Sunday part of the time, took no long week ends, vacation, or sick leave.

There were 25 daughters of "Bernice" in the egg test run at the hatchery. The test began March 1, 1957 and ended Feb. 28, this year. Seven of the little hens reached the 300 mark. They produced a total of 6,295 eggs, or a naverage of 251.8 eggs per hen in the 12 month period.

This curious nutria baby came out to have a look at the camerman.

These trappers not only realize profit from nutria pelts but also from sale of the delectable nutria meat.

The Nutria Story

By Ednard Waldo

THE nutria, erstwhile bete noir of Louisiana's marsh and farmlands, will neither destroy our muskrats nor eat the state's agriculture out of house and home, but will remain as a stable $1,000,000 adjunct to our fur industry, scientists say after two decades of studying the animal. The reason being: Nutria habitats are reaching their carrying capacity and the fur bearing animal has reached its production peak and is settling back to normal.

Brought to Louisiana in the early 1930's by the late E. A. McIlhenny, of Avery Island, from South America as an experiment, a score of the animals dug their way out of an "escape proof" pen during a hurricane and made their way to the marshlands and from then on the prolific fur bearers began to multiply with the rapidity of the rodents in the late Ellis Parker Butler's "Pigs is Pigs."

Within a matter of several years, after their number had been augmented by some more importations, the nutria began to appear practically everywhere on the Louisiana marshlands in unheard of numbers. The nutria fur take, in the 1943-44 season, was 436 pelts; by the 1950-51 season it had jumped to 78,422 pelts; last year the take was more than a half million pelts and farmers began to complain about incursions of the nutria into their rice and cane fields. It looked for a while like the voracious and prolific vegetarian was going to literally eat the state out of house-and-home. What made things worse, trappers complained, was that nutria pelts, which once had sold for as high as $5.00 had dropped to one dollar per pelt and in some cases were being bought in the marshes for as low as 25¢ each.

Trappers set out nutria pelts to dry on racks such as these.

One of the reasons for the drop was the poor and unwise handling of the nutria by our American merchants. As prices went down trappers found that a man could carry 20 muskrats out of the marsh in place of three or four nutria weighing as much as 15 to 20 pounds each, so the taking of the low-priced nutria became a liability. Moreover the worthless young nutria which follow the muskrat runs were getting caught in the muskrat traps, and the grown nutria were snapping the muskrat sets (traps) with their long, webbed hind feet and long tails. So the all-around fur take fell off and so did the number of trappers who abandoned their lifelong avocations for the steady payrolls of the oil and kindred industries.

In the 1955-56 season only 4000 trapping licenses were purchased from the Wild Life and Fisheries commission in comparison with the 20,000 taken out a decade ago. At an average of two trappers to the licensed camp this meant only 8000 trappers in the marshes. This was a sad outlook, indeed, for the Louisiana fur industry which had once produced more pelts than the rest of the United States, Alaska and Canada put together. However, according to Ted O'Neil, Chief of the Fur Division of the Wild Life and Fisheries commission, the picture has changed and the nutria, while it will not produce the predicted $12,000,000 fur crop, will remain a valuable addition in the Louisiana fur picture.

In making his prognostications O'Neil cited the lands of the Louisiana Fur Corporation in Vermilion parish as a good example of the carrying capacity of some of the finest nutria lands in the state.

"This property consists of about 154,000 acres of the best nutria habitat in Louisiana. At its peak it produced around 68,000 pelts and when this peak was reached there was a noticeable decline in population and pelts taken indicating that the marsh had passed its carrying capacity, as for an instance, the take dropped to 49,428 in the winter season of 1953-54; in the season of 1954-55 it went up to 62,807; in 1955-56 it dropped to 52,096 pelts and the 1956-57 season produced 45,014 pelts. This season 1957-58 is, of course, down to 15,000 due to the death toll caused by Hurricane Audrey."

O'Neil states that there has been considerable damage to crops in the fields on the edges of the marshes and to fields bordering on streams leading to nutria inhabitated areas, however, the U. S. Fish and Wildlife Service and the biologists of the Wild Life and Fisheries commission are at present working out methods to produce specific toxins that will prevent further crop damage.

"From the standpoint of fur production the fur trade is not particularly interested in those nutria produced out of the normal habitat of the marshes because the fur quality is not generally good," O'Neil says. "Dry habitat causes wear outs in the underside of the pelts along the bellies and legs. Cockle burrs, brambles and other undergrowth cause streaks on the legs and belly fur thus making the pelts undesirable."

At present the trapper gets a base price of $1.75 to two dollars for pelts 26 inches or more; these are No. 1 pelts and by the time the catch is graded down the pelts will average about 80¢ to one dollar each. In some cases buyers have gone down into the marshes and taken advantage of the trapper's ignorance of prevailing market prices and ob- pelts for as low as 25 cents.

This picture shows a good view of the nutria's webbed hind foot. Forepaws are like that of a raccoon.

Dogs are no match for the Nutria's powerful teeth. This hound was saved from sure death by the quick first aid of its master.

The problem now is to get the trapper's price up to an $1.50 average base price per pelt. Lack of competition in the market has caused this low price. Buyers have gone back to the muskrat market, as for an instance 1,000,000 muskrat pelts were purchased during the 1957-58 trapping season in St. Bernard parish alone. New retail buyer demand must be created for the ntria among the furwearing public.

"With the proper advertising, an informed public will immediately take to this truly remarkable fur which is almost second to none in elegance and durability. We see no reason why, with this impetus, the trapper may not obtain at least $1.50 per pelt. This would mean that with this added incentive to trapping the nutria, the take could be upped to three quarters of a million pelts resulting in an annual fur income of over a million dollars," O'Neil says.

Harvesting of the nutria meat for the market would additionally net the trapper 25¢ per carcass and it is estimated that if this is done it will be possible to bring at least 300,000 carcasses to the market. At present the Wild Life and Fisheries commission is working with several packing concerns toward this end. The meat of the nutria is not only delectable for human consumption, but is in great demand for dog and mink foods and methods are being evolved for getting the meat to concentration points in good condition. It also has been reported that orders have already been placed for tons of frozen nutria for shipment to mink ranches in the West.

About 20% of our nutria fur are used for outside coat material and the rest is in constant demand for linings known as "plates" in the industry. Nutria fur make the best and richest coat linings.

Actual prime production habitat for the nutria consists of about four million acres of marshlands which have a producing capacity of one pelt to three acres. The rest of the lands now being partly occupied by the nutria are the alluvial lands of the state and the rice and sugar belts and lakes and river bottoms throughout the southern and central parts of the state, however, the nutria fur producing habitat are the marshes. North Louisiana has never produced anything in the way of nutria pelts. The nutria eventually will relegate the major part of its populations to its natural habitat in the deep cattail and sawgrass marshes; nutria will usually seek this type of habitat which has never been top muskrat territory.

In the case of the nutria versus the muskrat, nutria will disturb the muskrat nests and small nutria will get into the trappers' muskrat traps. However, nutria and muskrat will not engage in combat and have been raised together in the same cages. As concerns its reputation for viciousness the nutria is more than a match for the best dog, however, it will not attack unless it is attacked first. Nutria make good pets, however, they are temperamental animals. In a litter some will be found that are naturally tame and others that are utterly intractable.

Whereas Louisiana has lost, we hope temporarily, its place as top producer over Alaska, Canada and the rest of the United States combined, the state is not alone in its decline of fur production for many other sections have suffered proportionately. Yet in spite of this the state led the nation in the production of the most important furs; for the 1955-56 season: Mink, 57,142 pelts; Muskrat, 1,821,840 pelts; and, nutria, 418,722 pelts.

In a total take of all pelts of 8,153,943 for all of the United States and Alaska, Louisiana still led all sections individually with a take of 2,270,698 pelts, or more than one-fourth of all pelts taken, according to the report on the fur catch for the 1955-56 season compiled by the U. S. Fish and Wildlife Service of the Department of the Interior.

In summing up the raw fur situation in the United States, the U. S. Fish and Wildlife Service reiterated the opinion of O'Neil when it stated in its report of June 1957, "The raw fur situation continues to be uncertain. It has been quite evident during the past few years that general improvement in the fur industry is practically impossible unless there is a greater diversification of furs used in good quantities in the manufacture of garments. Mink has been the fur in greatest demand but the fur trade must be more than a one-fur industry if it is to be economically healthful. This situation is causing a continued decline in trapping operations because trappers can make little profit from their traplines. Meanwhile the fur trade continues in its efforts to revive the demand for the neglected furs."

Along the streams in the torrid zones of Argentina, Brazil and Chile, its native habitat, the coypu nutria is regarded as the South American Beaver or Beaver Rat. In those countries it is known solely by name as the *coypu* and its fur or pelt is called *nutria*. However, the latter word being more convenient to our American tongue, this strange rodent has become known almost throughout the United States as the *nutria*.

For scientific purposes the animal is called *Myocastor coypus* (Molina); Phylum, Chordata; Subphylum, Vertebrata; Class, Mammalia; Order, Rodentia; Family, Capromyidae.

You don't have to look for the nutria, there'll be tracks aplenty if they are around.

The nutria is of such a specific type that it is difficult to make comparisons with rodents of its order. Unlike the beaver it has a round, long, scaly and somewhat thin tail which looks like that of a rat.

As for other physical characteristics, the nutria looks somewhat like an overgrown guinea pig, with a rat's tail, of course. Its body is solid and heavy and its belly barely skims level ground when it is walking on all four legs.

For further details we quote Dr. L. J. Billelo, biologist of Houma, La., who aptly describes the nutria's external features with the eyes of a scientist.

"Its short neck and solid wide head narrows towards the eyes and the mouth. The eyes are small. The iris of the eyes are dark brown and the pupil is slightly rounded. The light of the sun contracts the pupil to form a vertical line. The ears are small with slightly rounded lobes; they can close over when the animal is under water. The nutria can stay under water for seven minutes. The total configuration of the male is wider and stronger than the female. The female has a slightly longer snout than the male. The front and hind legs differ somewhat in that the front legs do not

Light patches in the foreground are nutria nests, in background is rice field.

support much weight and therefore are shorter and smaller. The front feet have four digits each. They use their front appendages to hold food that they eat and take it to their mouths. The hind legs are very stout, larger and stronger than the front legs. There are five digits on each hind foot held together by the tough membrane or web so necessary in swimming. When in the water, the nutria uses only the hind legs for swimming. The tail is about two-thirds the length of a nutria with a thick prominal part having an abundance of hair and no hair to be seen on the distal one-third of the tail.

"The naked, round tail readily distinguishes the nutria from other North American semi-aquatic fur bearers. The hind feet are webbed and the ears are small and lie close to the skull. These are, no doubt, specializations for aquatic life.

"A full grown nutria will have a length of about twenty-five inches and a tail of sixteen inches. It is said that some nutria weigh as much as fifty pounds, but they generally range in weight from nine to eighteen pounds, depending of course, on the age and sex of the animal. Large orange colored incisor teeth are set deep in the mandible of the lower jaw and maxilla of the upper jaw. They range from one to two inches above the ginjiva in length and fit with the upper incisors overlapping the lowers with the curvature of a semi-circle. The dental formula of the nutria is: i 2/2, c 0/0, p 0/0, m 4/4.

"The color of the nutria is sort of red-brown along the dorsal and dorso-lateral area and black-brown on the ventral side. The fur of the animal is sometimes used in a plucked condition. The undercoat of fine soft hair grows to a thick bluish-gray color.

The female nutria has four or five teats on a side. Teats are in a dorso-lateral position (on its back instead of its belly) which is unusual in the rodents and is no doubt an added specialization. The young can be suckled while the mother is swimming."

According to biologists Cargera and Yepes, who made a study of the nutria two decades ago, the male nutria matures sexually at eight months and the females average from six to seven months. The gestation period lasts from 127 to 132 days with two litters a year being produced and sometimes five in two years.

From two to nine young are born and up to 13 has been recorded, but this is exceptional. The females, giving birth for the first time, have from two to five with an average of four.

The young nutria are born with their eyes open and fully covered with a baby fur coat and tiny webbed feet and take to water when only 24 hours old. The nutria engages in polygamy by living with two or three females and the average age of the nutria is four years. Some live as long as seven, however, this is unusual.

Besides resembling a king-sized guinea pig the nutria also has a large rat-like tail and powerful teeth.

Nutria fur is the equal of that of its cousin the beaver in beauty and durability.

The nutria is a twilight type of animal. That is to say, it goes to the banks of water for food in the late afternoon or early evening. A nutria will usually use the same trial in going to and from food. It is seldom that the animal stays away from its nesting place overnight but when it does stay away, it always comes back in the early morning before the sun comes out.

The sight of the nutria is believed to be used to see movement rather than the detail of the area. Hearing seems to play a greater role in living than does sight. Objects pawed by the nutria are studied by touch more than by smell. Tactile corpuscles located in the paws or feet are very sensitive to touch.

Myocastor is a semi-aquatic rodent which makes its hideouts artificially above water or in caves, along banks of rivers, and always near roots or readily available vegetation which it uses for food. Water is said to be indispensable for its life and is very necessary for prime fur. Tunnels are usually about four and a half feet in length and about ten inches in diameter. Nests are often seen on floating islands of very thick vegetation. Reeds are bent and interlaced above the water's edge by the clever weaver. The female nutria always cleans, rests and dries herself before going back on her nest. Therefore, her nest is always kept dry.

As all forms of animal life may become sick from overeating or lack of food, so will the nutria. And according to biologists, too much food in the diet will cause a fat nutria to become prone to disease and indifferent towards reproduction. Perhaps this may be the key to nature's way of stabilizing populations. Females become sterile by hypertrophy of the ovaries. An animal that is very fat will produce a pelt that is greasy, hard to dry and more prone to infection.

Where nutria are plentiful, excretia may be in abundance and parathypiod with parasitic infections may become prevalent, Billelo has noted. Tuberculosis, false tuberculosis and

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Retriever Club Holds

Above—Officers of the newly formed North Louisiana Retriever Club, left to right: Erle Barham, Oak Ridge, President; Dr. Robert Wood, Monroe, Vice President; Mrs. Erle Barham, Oak Ridge, Secretary; W. M. Yates, Monroe, Treasurer; and C. R. (Chili) Baur, Monroe, Reporter.

Upper Left—President Barham addresses the group at the banquet held prior to the trial.

Left Center—"Dolly of Cram" poses majestically with her owner, W. L. (Bill) Kinney (extreme right) of Shreveport. With Kinney left to right, are Dr. Robert Wood, Allen C. Barham, Bastrop, and Erle Barham.

Lower Left—Both dog owners and spectators move down the line to the next event of the trial.

By Calvin Blackwell

EVERY dog has his day" and Sunday, March 9, the retriever had his day for the first time in Louisiana, in the form of a field trial held at Oak Ridge, under the auspices of the recently organized North Louisiana Retriever Club.

Although the trial itself had no official status and the 16-dog entry could hardly be called heavy, it would be a disservice to consider the activities anything but a success. The sole purpose of President Erle Barham and fellow club members was to stage an "orientation" trial to determine public reaction and support. As if to assure the foundling club of future success, well over 200 spectators braved a chilling wind and bleak overcast from 10:00 a.m. until 4:00 p.m., with ever increasing enthusiasm.

Most of the entries were of local origin except for two from Greenville, Miss., one from Marshall, Texas and one from New Orleans and, as usual in trials involving water retrievers, the Labrador had the greatest representation.

Conditions could hardly have been better suited to testing a "duck hunting" dog. The purpose of any field trial is to improve the breed by having the participants perform under the simulated conditions characteristic to the breed in mind and this was certainly a day reminiscent of duck season. A retriever, however, is not necessarily a "fetch me the duck" dog as was so aptly demonstrated in this single land retrieve and double land retrieve, two of the four tests. He is instictively endowed with an urge to bring some specific object back to his master whether it be a cloth dummy in a backyard training or conditioning session; a pheasant in an upland hunt; or a duck downed in an icy pond or river.

Nevertheless, there is hardly a more thrilling sight in the sporting world, either to hunter or housewife, than the performance of these magnificent animals on a water retrieve. From the moment the shot is heard and the bird hits the

First Louisiana Trial

Above—Mrs. Camille Wood, wife of Dr. Robert Wood, Monroe, coaches her entry, "Happy," into action.

Upper Right—J. C. Rolfe shown with "Sut" in action.

Right Center—Dr. C. D. LaBorde, New Orleans, sends his well-trained yellow Labrador, "Flash", on a double retrieve.

Lower Right—"Here he is," Flash seems to say as he obediently returns the duck to Dr. LaBorde.

—*Photos by Blackwell*

water there is a period in which training and obedience holds a slight edge . . . ever so slight . . . over an inborn urge to get to this object as soon as possible and return it to his handler. Trembling with anticipation. . . a feeling which spontaneously is transmitted to the spectator. . . he obediently awaits the command at which he literally explodes into the water with all the grace which urgency will permit and returns the bird to his waiting handler.

The "downed" birds were barnyard ducks with wings tied and feet taped. At the shot they are thrown to a sufficient height to make a splash visible to the dog from a distance in order that he may mark his game. . . a most important requisite. The tieing and taping procedure allows the same ducks to be used over and over as they are returned to shore by the dogs without so much as a break in the skin.

Most of the participants in this particular trial were relative newcomers to field trial competition but if enthusiasm is any measure of success, the retriever is destined for a great future in Louisiana. However, Dr. C. D. LaBorde of New Orleans had difficulty convincing anyone he was a field trial novice after his yellow labrador, Tuck's Flash, repeatedly turned in a sparkling performance on each test. Bill Kinney of Shreveport showed color movies Saturday night at a pre-trial banquet and was on hand to give periodic demonstrations during the trial with his prize-winning black labrador, Dolly of Cram.

Kinney told the group that Labradors can easily be taught directional signals and these aid materially where multiple retrieves are needed. He stated further that a dog should not be 'rushed' in his training but should be hunted

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The Tensas Deer Picture!

By W. C. Goins

Dewey Wills, District Supervisor, Ferriday, examines cedar tree from which buck deer have rubbed most of the bark. This tree is located on the front lawn of a Tensas Parish resident.

On February 8 this year, the Louisiana Wild Life and Fisheries commission began what was the first legal shooting of antlerless deer in the state, in this generation.

The wooded areas of Tensas Parish had become so overpopulated with deer that for several years the damage by deer to the farm crops in the parish had been severe. While some of the large landholders, or farmers have been able to absorb most of the damage, the same does not hold true as far as the smaller farmers are concerned.

In Tensas Parish deer herd control is not possible by hunting pressure on bucks alone. This past winter at the end of the regular deer season, the Louisiana Wild Life and Fisheries commission planned to hold a five-day antlerless, or doe season in this overpopulated area. Much opposition arose in the parish to this plan. Residents of the parish expecting a heavy influx of hunters from all parts of the state felt that hunting safety afield would be a hazard. They claimed game law enforcement would be impossible with such a hunt as was proposed. The results were that, on the advise of the commission attorney, Warren Simon, who pointed out that actually an open season on doe deer in any part of the state was an impossibility, according to the presently existing state laws, this plan was abandoned.

This however, still left the farmers with no relief in sight. In an effort to give this sorely needed relief, the commission utilized a law passed in 1926 by the legislature that gave the farmer the right to protect his property against depredation by wildlife and this included deer as well as other species. Acting on the rights granted by this law, the commission made plans for the relief of the farmers, which in plain words meant the reduction of the size of the deer herds in Tensas Parish. Accordingly, enforcement agents as well as personnel from the fish and game division, were sent into the parish with instructions to coordinate all efforts to relieve the situation.

The herd reduction there was operated by two types of control. Enforcement agents worked in groups in some areas while a segment of this group worked with the farmers themselves who were suffering the heaviest crop damage. The personnel of the Tensas Parish Sheriff's office, under the direction of Sheriff Elliot Coleman, worked hand-in-hand with the game agents.

The second method of deer control was placed in the hands of the farmers themselves. Permits were issued to the farmers of the parish who were suffering crop damage. They were instructed not to shoot deer at night unless in the company of game agents. Also, their requests for permits were carefully screened to avoid the issuance of permits to those who only wanted to shoot deer regardless of crop damage. It was discovered that residents of other parishes owning land in Tensas but none of it in cultivation were applying for permits. These applicants were refused permits.

Included in the text of each permit was a request that the farmer save the lower jaw of each deer killed for the biologists of the Louisiana Wild Life and Fisheries commission for study purposes. The biologists were also on the scene collecting blood samples and reproductory tracts to further their studies of deer conditions.

The reports of biologists, after checking the 134 deer killed in Tensas parish during the period from February 8 to February 25, show several extremely important facts as to the condition of this deer herd.

Examination of the carcasses showed that in the fawn class there was a very distorted sex ratio of three females to one male. This startling evidence is without parallel anywhere in the history of game management, the biologists claim, and they advise that every means should be exploited to gather all information possible to try to find the cause of this condition. Research in other areas indicates that this condition can be expected on over-populated deer ranges which carry an excess of does as does the deer herd in the Tensas parish area.

Of the 134 deer killed, 105 were females, 28 were males and there was one fawn not sexed. Of the 105 females, 44 were fawns, 16 were yearlings and 45 were adults. Of the 28 males, 15 were fawns, three were yearlings, six were adults and four were not aged. The average weight of the female yearlings was 96.6 lbs.; that of the female adults was 123.2 lbs., and that of the female fawns was 55.9 lbs. The average of the male fawns was 62.3 lbs. These figures plainly indicate that these deer were considerably undersize although they were, in most instances, reported to be fat.

Visual examination of the liver of mature animals revealed that the older ones of the herd were heavily parasitized by the deer liver fluke. In one instance an estimated 75% of the liver tissue was destroyed leaving the animal very little of this organ in a functional condition. Examination of the reproductive organs indicated that nearly 50% of the adult does were bred which would indicate that probably half of the doe population of the Tensas deer herd would not reproduce this year.

Although the general physical condition of the deer in regards to body fat was good, gross field examinations of about 10% of the stomachs revealed an absence of any browse, but instead agricultural crops and weeds of agriculture comprised the only identifiable foods.

Two visits into the woods failed to reveal much deer sign away from the fields and there was no evidence of recent deer use of wood browse species. The forested portion of the problem area is virtually stripped of its ability to support deer and the continued over-browsing has begun to seriously effect the species composition and timber reproduction of the forest both from a commercial timber reproduction and a deer welfare standpoint.

The information the biologists wanted from the animals was sex, age, live weight, physical measurements, general physical condition, percent of does pregnant, parasites and blood samples for a disease check, and a detailed examination of the data obtained leaves no room for doubt that the farmers in this area are not the only losers as a result of continued over-population of the deer herd. In fact, the damages to the deer herd have been relatively greater than the damages to agriculture.

It should be pointed out that a great excess of deer must be allowed to compete for food on depleted forest ranges, and in this case on agricultural areas to provide a relatively small harvest of legal bucks. This is true even when replacement deer grow into maturity at the rate of 50 males to 50 females and it is even more serious when doe fawns comprise such a large percent of the fawn crop as the three to one ratio in this instance.

With regard to the deer liver fluke found in the mature animals killed, it is almost certain that deer in this condition are more prone to fall victim to ailments that would be minor to a deer with a healthy liver consequently there is danger of a heavy "die-off" in this area.

Another fact revealed by the biologists was that the indicated fawn production, from herd composition counts made last fall, was very low. The biologists believe, however, if the herd is brought under good management most of these prevailing conditions may be offset.

Wild Life agents spent many days and nights in this deer control work, and worked in adverse weather conditions.

As of March 4, a total of 314 deer had been removed by the agents. Notices were mailed out to the farmers participating in the shoot but their reports were very slow coming in to the district office at Ferriday. A total of 64 deer had been reported by the farmers on March 4, but officials were aware of the fact that this represented only a fraction of their take at that time. New efforts were directed to gain a full report. The results were that on March 10, or two days before the end of the shoot, farmers from 105 farms in the parish reported a total kill of 160 deer.

Mrs. R. F. Rite, Sr., who lives near Waterproof, stands beside a camellia on her lawn. Deer have eaten the foliage from the bush.

Disposal of the deer meat, not consumed by the farmers, was handled effectively. Charitable institutions state-wide had this meat made available to them. In some states where this method of deer herd control has been practiced, the farmer shooting the deer was compelled by law to let the deer lay where it fell and much meat was wasted. The Louisiana Wild Life and Fisheries commission did not go along with this practice. They felt that such a waste of food was unthinkable, especially since it had cost the farmers of Tensas Parish so many thousands of dollars in crop damages to support this herd of deer. Consequently, the farmers were permitted to keep what deer meat they felt they could use and most of them, having tenants on their farms who had shared the losses of the crop damages, used a lot of the meat.

The meat not used by the farmers was placed in cold storage at Ferriday and held until such time as some charitable institution could send for it. The institutions sharing the meat were, Baptist Children's Home, Monroe; Methodist Children's Home, Ruston; Louisiana Training Institute, Monroe; St. Joseph Convalescent Home, Monroe; Concordia Parish School Board (for the school cafeterias of the parish); Central Louisiana Hospital, Pineville; the colored school, St. Joseph; E. A. Conway Hospital, Monroe; East Louisiana Hospital, Jackson; and the Lallie Kemp Hospital at Independence.

In answer to requests concerning the deer situation in the overpopulated areas of Madison as well as Tensas Parish, Carroll J. Perkins, for 17 years a wildlife biologist for Louisiana's fish and game agency, prepared a summary on the subject. Although Perkins is no longer connected with the commission, having entered private business, he stated that he found it difficult to divorce his interests from the Louisiana sportsmen. Perkins' summary as as follows:

"This deer herd has developed almost entirely since the high waters of 1927. The reason for the phenomenal population in this area was two-fold:

1. Ideal conditions for deer developed following the cutting of the virgin hardwood forests in this area. High quality food was abundant in the shrubs and hardwood seedings that came in after the trees were removed. (This floodplain type of soil is very rich and supports a tremendous amount of vegetation.)

2. Excellent protection by the landowners and parish officials, (combined with the fact that much of this area was inaccessible by roads and consequently the deer were not subjected to heavy hunting pressure) allowed the deer to maintain the maximum rate of reproduction.

"In recent years several factors have caused this country to become overpopulated.

1. Probably the most important factor being that the forest vegetation has grown up out of reach of the deer and has made less deer browse available.

2. Much of the wooded areas have been cleared for farmland.

3. Much of the area is being used by cattle and there is considerable competition for the available food.

"These conditions have resulted in the deer becoming almost wholly dependent upon the farmers' fields for their food supply during certain periods of the year. (It is my belief that in some portions of these parishes at least 90% of the deer used these farms during a large part of the year.) This naturally causes extensive damage to the farmers' crops and they are justifiably concerned about these damages.

"I am sure that there are many sportsmen in the state who do not believe that there are too many deer in this area, but I would like to give you a few facts that definitely indicate overcrowding:

1. A scientific check of deer food shows a complete absence of preferred foods during a portion of the year. This causes the deer to depend upon the farmers' crops which in many instances are inferior as deer food and will only sustain life. (I am sure that you have heard that some hunters killed fat deer in this area during the past season. This is probably because of the good acorn crop last fall, but the mast is all gone by this time and it is not a dependable source from year to year.)

2. Deer from this area had the greatest infestation of parasites, both external and internal, than any other herd in the state. These parasites probably do not kill any deer outright, but reduce the overall vigor and contribute toward death from other factors.

3. Insofar as is known there has been no outbreak of fatal disease in this area. In several instances diseases were reported but turned out to be caused by deer getting hold of poisons that the farmer used on his crops.

4. It is generally believed among game technicians that an unmolested deer herd should increase by 1/3 each year. A ratio of 1 buck to 5 does is thought satisfactory, but any more does per buck will result in some does being bred late with a subsequent late fawn drop. These late fawns will probably suffer a high mortality rate during the winter. The probable ratio of breed-able bucks to breed-able does in these over-crowded areas is 1 to 15. Furthermore there is a gradual deterioration of the herd as the better bucks are killed each year, leaving the inferior bucks to breed. This will become more evident as time passes.

5. Another factor which definitely indicates overcrowding is the small size of legal bucks taken from this area. Deer from Concordia Parish, (which has a very healthy herd) weigh more and have more antler points than those from Madison and Tensas Parishes. In a normal deer herd with good food conditions, an 18 month old deer should have 4 to 6 points. In the trapping operations in Madison and Tensas Parish the biologists trapped several male fawns that were five or six months old, tagged them and released them at the trap site. The following year they were retrapped and found to have spikes only 1 to 2 inches long. Although some may produce longer antlers, many definitely don't.

John Campbell, Fish and Game Division, Louisiana Wild Life and Fisheries Commission, turns over to Henry Austin, 10 deer for Louisiana Training Institute, Monroe.

"Many writers have requested information as to the total number of deer in Madison and Tensas Parishes. No count of this kind has ever been attempted since the biologist feels that it is more important to balance the deer herd with existing foods than it is to know the total number of deer present. Food conditions vary for every portion of the state. From my observations I estimate that the overcrowded portions of these parishes probably contain 30,000 deer. In the heaviest concentrations the populations probably exceeds 1 animal per 6 acres.

"I also believe that due to the reduced rate of reproduction and the heavy rate of mortality in the adults that the herd today is at least 25% less than it was in 1952 and will probably continue to decrease until it comes in balance with the food conditions. I'm sure that those of you who have read this far, are wondering why I am concerned with these deer, especially since the herd is being thinned at this time. First, I do not believe that the present method of reduction being used in these parishes will do any appreciable amount of good, and second, because we have several other areas in the state that already contain a similar situation of overpopulation, and thirdly, because the Commission has done such an excellent job of restocking, these conditions will in time become prevalent over practically the entire state. There is only one satisfactory method of correcting the existing condition and prevent its occurrence in other places . . . *an any deer season.*

"It has been successfully practised in other states where the deer herds got out of hand. After a reduction, the overall deer population can be managed so that more and better legal bucks can be harvested annually. In no instance has any other method of managing overpopulated deer herds succeeded. The Louisiana Wild Life and Fisheries Commission should be empowered to set such seasons and the majority of the sportsmen should request them."

Louisiana is not the only state with the problem of controlling overpopulated deer herds. To add further emphasis to Perkins' statements on the subject, Glen F. Cole, range biologist with the state of Montana said:

"In the age of missiles and Sputniks, the use of research results and a scientific approach should be something the public demands in a deer management program. The professional game managers and research biologists are hoping this is the case."

Crop damage by the deer in Tensas Parish is very apparent. The farmers of the parish have not been able to absorb this damage over a period of several years. Some of the smaller farmers have not been able financially to meet this loss since they were hit the hardest. Where a farm of some 2,000 acres could understandably suffer a loss of, say, 50 acres of soy beans, the smaller farmer losing the same amount would be completely wiped out as it would represent his entire crop.

For the most part, the farmers of Tensas went along with the commission's plans for the reduction of the deer herds. There were some who did not believe the deer to be too populous in their own section of the parish and this may be true. At least two farmers owning or leasing 10,000 acres or more each in the parish did not participate in the shoot. They stated that the temporary relief given by the shoot was not the answer to the problem and they would await proper and adequate legislation which had solved the problem in so many other states in the past few years.

In talking to farmers from various sections of the parish, the writer did not find it difficult to understand their problem. Although statements from these farmers did differ in text, they essentially ran along the same lines. That was, too many deer foraging on the farm crops. One farmer stated that he was participating in the shoot and, although he was not necessarily enjoying killing the deer, he knew it to be a necessity. He went on to say that the reduction of the herd should have started some several years ago. Being a hunter himself, he agreed that the program would improve hunting in the parish.

One lady who had 420 acres in cultivation had suffered several thousand dollars damage in the past few years. She said, "It is not that we don't want the deer, we just have too many of them." She stated that she had lost two thirds of her wheat crop last year to the deer and about the same proportion of her soy bean crop.

Another farmer reported that he actually harvested $7.00 worth of soy beans from an eight-acre patch he planted. Still another who planted 87 acres of beans told of harvesting 18 bushels. On one farm it was reported that the deer ate the vines from a sweet potato field and then actually pawed the potatoes themselves out of the ground.

In terminating the shoot on March 12, F. Lamar Clement, director for the commission, gave three basic reasons for halting the program at that time. They are as follows:

1. The woodland areas of the parish are "greening-out" at this time and are providing such foods for the deer as grasses, vetch, and green briars and the trees are budding which also adds to their food supply. All together these present a fair amount of deer food and the deer are moving back into the woods away from the farm crops.
2. In areas where the deer have been shot they are now much wilder and the long shots necessary to bag them are causing crippling losses to mount. The numbers taken to date has relieved crop damage and the farmers are satisfied with the present results. The herds are reduced to some extent and the operation has pushed most of the remaining deer back into the woods away from the farm crops.
3. The adult does are becoming heavy with fawns.

Rudolph P. Easterly, Chief of the law enforcement division of the commission reported that the program had been under the strictest possible control and added that only two arrests had been made during the entire program. He added that when the program was ended game agents with his division would patrol all areas of the parish and rigidly enforce the game laws of the state. Easterly said that every available game agent would be brought into the parish to step-up his enforcement program.

Elliott Coleman, Sheriff of Tensas Parish, stated that he and his deputies would work night and day if necessary to assist game agents with the enforcement of the laws. The sheriff added that Tensas Parish has been a shining example of what can be done to build up deer herds of the state. He said that it took, however, the cooperation of the enforcement people, the courts, and most important of all, the people themselves. The sheriff added that there was only one solution to the overpopulated condition and that would require an open season on does as well as bucks under tagging system.

The Louisiana Wild Life and Fisheries commission chairman, E. R. McDonald of Newellton, stated that the project was far from being the solution of the deer problem in Tensas Parish. However, he said that this project was begun only for the immediate relief of the farmers who felt they could not bear the crop damage for another year. He further stated that he expected adequate legislation to be passed by the forthcoming session of the Louisiana Legislature that would give the commission the right and the authority to declare an open season in those areas where the deer are too populous and the herd composition is out of proportion as to sex ratio.

RETRIEVER CLUB

(Continued from Page 13)

at least one season before directional signal training is attempted. This, of course, would be before the dog has reached the age of two years.

During the trial two dogs other than Dolly of Cram, made outstanding retrieves. Gold Rush Pal, a golden retriever owned by Dr. John Williams, Greenville, Miss., performed beautifully. Another dog very appropriately named "Flash" and owned and handled by Dr. C. D. Laborde of New Orleans appeared to be one of the best on the field. This dog, a yellow Labrador, took to the water in a spirit of eagerness and recovered the ducks in fast time. Only three years old, "Flash" stands to bring the doctor many ducks to his blind, as well as prizes and trophies at retriever trials in the future.

The trial at Oak Ridge was by no means limited to male owners or handlers. "Happy", a female black Labrador, was entered and handled by Camille Wood, wife of Dr. Robert Wood, of Monroe, and both "Happy" and Camille looked happy when she (Happy), retrieved as well as the best.

The North Louisiana Retriever Club has, at the present, 24 members. The interest they have already created has been great and in a very short time their membership may be doubled.

The spirit of fellowship and sportsmanship that prevailed throughout the trial was also something to be proud of. When an owner's dog made a blunder no "razzing" took place. It is most likely that most of the owners or handlers could picture themselves in a similar situation. The spectators were, on the other hand, unanimous in their applause when a dog performed well. This kind of sportsmanship is something to be remembered and practiced at all future field trials.

Within the past decade, the ranks of the Louisiana hunters have increased considerably. The bag limits on waterfowl have, at the same time, been greatly reduced. These two facts make it imperative that as much game as possible be conserved and it is quite possible that a good retriever in each duck blind would add considerably to this conservation by retrieving ducks that are otherwise not found, or those crippled and not reduced to the bag.

If all the duck hunters of the state could attend one of these retriever trials and witness first hand, the advantages of hunting with a retriever, chances are that eventually, all would own one. If there were no crippling losses, bag limits would in most cases, be filled.

Due to the nature of the trial, the dogs were not under judgment and no prizes or official designations were made, but, most of the tests encountered in any competition were given in order to familiarize the participants and gallery with procedures. In contrast to trailing hound trials and those held on upland game, which cover large areas, retriever trials are particularly suited to viewing by large groups inasmuch as the activity is confined to a relatively small area in view of everyone at all times.

With their surprising success as a stimulus, the North Louisiana Retriever Club is busily making preparations for another field trial in May with the pledged support of several clubs from other states.

Fishing Is a Sport That All Members of the Family Can Enjoy

Can Fish Hear?

By David Gunston

Can fish hear? It is an interesting question and one of considerable importance to anglers, but because of the absence in fish of ears of the human or animal type and the vast difference between sound in the air and sound under water, it is a controversial and complex one, full of apparent contradictions and marked by a startling lack of real knowledge.

For a long time it was generally supposed that fish were to all intents and purposes, deaf. Then various anecdotes and experiments occurred which began to elucidate the question, and in recent times there have been many accurate scientific tests on the hearing of fishes of all kinds. The classic example of the inconclusive type of early experiment is that of the Benedictine monk who kept trout in a pool at Krems, in Austria. He had the notion of ringing a dinner-bell whenever he fed them. Standing on the edge of the water he had only to swing his bell a few times, and the fish would collect for their food. Then one day someone tried the trick without using a bell, merely swinging his arm up and down. The fish came just the same; it was the sight, and not the sound, that had attracted them.

Sounds, to most fish, must be vibrations in the water, not vibrations in the air, which is what we ourselves hear. Not many fish can hear aerial sounds to any extent unless they are accompanied by some vibration through the ground into the water. Fish have no external ears, and, unlike human beings, no middle ears. They possess only the sensitive inner ear, embedded in the bones of the skull. This leaves them under no disadvantage, however, for human ears are designed to catch sounds from the air and the actual hearing mechanism is the delicate inner ear, a capsule surrounded by bone and filled with liquid. In the water, which is a far better conductor of sound waves than the air, the fish needs neither outer, visible ear, nor middle ear to transport the sounds. It needs only a simpler inner ear, without the liquid, for it is already in that transmitting liquid, the water.

But in human beings, the ultimate organ for turning actual heard sounds into nerve impulses, the spiral cochlea, is altogether missing in fish. All it has is a small projection on the sacculus (the sac-like region surrounding the spiral cochlea when it is present, as in human beings and animals) called the lagena, which appears to be a far less delicate piece of mechanism. This fact seemed to indicate that, after all, fish cannot hear. But missing cochlea apart, experiments have proved that fish can hear, and hear well, so we must conclude that the lagena has as its function the actual registering of sounds on the brain.

The ears of various kinds of fish, although conforming to that pattern, vary considerably. The simplest type of ear occurs in the hagfish, where a semi-circular canal has a swelling at both ends which contain a jelly-like substance connected by fine hairs through sense cells and nerve fibres direct to the brain. Hearing is effected by oscillation of the jelly, which in turn moves the hairs and sends messages to the brain. In lampreys there is an additional canal set at right-angles to the original one, and with swellings only at one end. This gives a better sense of movement and balance, which are, of course, the other function of ears. In the cartilaginous fishes there is a third canal covering the remaining place of space, and the more highly developed fish have minute grains of chalk, or otoliths, suspended in the jelly to make it even more sensitive. There are also some variations in the way the ears are connected to the external surface of the fish. Some lead through ducts direct to the water, others to the swim bladder. In the latter cases, vibrations in the water are picked up by the swim bladder and transmitted to the ears.

Even when it became obvious that fish could detect what we call sounds, some objectors put forward the explanation that such noises as tapping on a fish tank, or making a vibratory sound close to the water, were not really 'heard' by the fish, but registered through the skin in much the same way that we can 'hear' the sound when we place a hand on a piano being played.

But the experiments of Professor J. P. Frolov proved beyond any doubt the hearing capacities of fish. Defining hearing in fish as "any disturbance that produces hearing in the human ear which calls forth response in fish if it acts through the ear and not simply through the skin or some other organ," he placed a telephone inside a small balloon, submerged it in water and directed sounds of varying pitch at goldfish. He found that normal goldfish responded to all vibrations from 43 to 2,752 per second. Human hearing is roughly from 30 to 30,000 vibrations per second, with middle C at 256. By tethering the fish with an electric wire loosely fastened so that they could swim easily, the telephone sound was emitted and a weak electric shock given to the tethered fish simultaneously. They reacted with violent movement in the water. After some forty tests, the shock was omitted and the fish responded as before to the telephone sound.

Other tests have shown that fish can be trained to come for food, or to move from one tank to another to get food, by making noises close by overhead. Tin whistles, organ pipes, guitar strings and tuning forks have all been used in this way with marked success, often as few as five or six trials only being needed to make the fish understand. Minnows have actually been trained to react to two different sounds by feeding them when one is made and hitting them gently when they hear the other. Killifish responded to frequencies of only 96 when a viol string was stretched across its acquarium. Other fish have been recorded as responding to much higher sound frequencies, the minnow 7,000 vibrations per second, and the catfish, 13,000. Frank Lane records meeting a lady who stated that her two pet carp actually "danced up and down" when dance music came over the radio near their aquarium.

The subsequent work of the two German investigators at the University of Munich, von Fritsch and Stetter, has shown that fish hearing is even better than was originally supposed. Minnows were blinded and when fed taught to associate the appearance of food with a low sound made by a whistle or a tunning fork. After 12 or 15 times a reaction was obtained, and the fish could actually hear sounds made 200 feet away. A man diving into a larger aquarium alongside that containing the minnows could not hear the sounds any better than they obviously did. The range of sounds heard was proved to be quite great, and the experimenters showed that sounds much higher or lower could also be heard, as well as sounds only very slightly different in pitch, provided food-reactions were set up by practice. Some fish were even able to distinguish between a note and its minor third.

"You played hookey today? WHERE?"

So therefore we have quite definite proof that a number of kinds of fish, among them minnows, goldfish, eels, catfish and weakfish do hear, and there seems every reason to believe that tunny, tarpon, pike and many larger fish also hear likewise. Only the sharks and rays hear less well, it appears. Fish in shallower waters hear as a means of avoiding approaching danger, and those in the deep sea—well, the ocean has now been proved to be a noisy not a silent place, and if its dinizens make sounds as they quite definitely do, nature obviously means them to be heard.

The moral for anglers is, of course, to treat all fish as creatures with quite good hearing, especially in shallower waters. A noisy approach on a river bank will scare off likely fish, and undue noise at any time when angling is best avoided. Salmon will sometimes leap into the air if one smartly claps one's hand on approaching a pool. If one noisily plucks a fly from the water before a new cast it may well frighten trout and prevent them rising for quite a distance. Incidentally, minnows can hear better than trout, so don't even scare smaller fish. Trout are themselves scared when they see minnows alarmed, as they seem to realize they do not hear as well and danger must be imminent.

Though color is often used in identifying fish, it's not always a good criterion since it varies widely in different parts of the country or even within the same lakes or streams.

A Weed Is A Weed Is A Weed

Things are not always as they seem. This is particularly true when it comes to efforts to improve wildlife habitat and increase game populations, according to Dr. J. P. Linduska, director of wildlife management, Remington Arms Company, Inc.

"A few days ago," says Dr. Linduska, "I was showing an interested friend around our wildlife study and demonstration area near Chestertown, Md. I noticed he was studying a hog-wire fence pretty well grown over with honeysuckle."

"And what do you do about that stuff?" he asked.

I replied, "Oh, we fertilize it." And the discussion was on.

"What?" he questioned, "fertilize that pesky weed?"

"Well, no, not that growing on the fence. We spray that with 2,4D. But over here—on this side of the road—that we fertilize. As a matter of fact, I planted that in there last spring. It's doing very well, too."

"Explain," says he.

"It's the site—almost a vertical bank—sloping it back to where you might establish a grass sod or a stand of sericea would cost a good bit. And most farmers don't have grading equipment anyway. Honeysuckle, given half a chance, will stabilize the soil and prevent further erosion. It's all you want, or need, in that spot.

"Furthermore," I continued, "this 'weed' as you call it has other things in its favor. It's not hard to look at, especially in the winter when it sticks up green-through-the-snow when everything else is yellow-brown dead. Flowers are sort of pretty, too. And they have a nice scent—not like My Sin or Chanel No. 5—but they sort of please the nose."

My friend was only partly impressed. "Weeds is weeds," he insisted.

We turned in a farm lane and were passing the farm hand's garden.

"Well, look at it this way," I added. "This fella's strawberry bed lies next to his raspberry patch. Raspberry canes invade his strawberry rows and he chops them out. And each spring the strawberry runners that extent over into the raspberry department are worked over with the same ruthless enthusiasm that he applies to the ragweed and crab grass. The mere fact that they're strawberries and raspberries doesn't convey to them any complete immunity to the hoe if they're growing where you don't want'em. As a matter of fact, I suppose orchids could be weeds if you were trying to grow gardenias and the orchids kept trying to muscle in."

"Hmph!" says he. "Let's talk about your program of game management."

"We are," I bored in. "Most of a game manager's time is spent in trying to get things to grow where he wants them and keeping them out of places where he doesn't. And as often as not, he's dealing with the same plants in both cases.

"Take farm game, for example. Most farmers like to hunt, so they try and keep the farm attractive for game. But they've got to make a living, too. So spring and summer it's a full time battle with cultivator and herbicide to keep the corn and soybeans reasonably free of ragweed, smartweed, foxtail, and a zillion other plant pests. But any farmer that's done much quail or pheasant hunting also knows that a healthy weed patch is a mighty likely spot to visit on a quick hunt. So if he has a small patch of idle ground, he's likely to work it in the spring so as to bring on a stand of annual weeds. So! What were weeds in the corn rows have now become a food patch for wildlife."

"Bosh!" says my skeptical friend, "you'll have to do better than that."

"O.K. Let's look at the deer situation—there's always the deer situation. As you know, these critters are browsers. And they're not too fussy about what they browse. Oak, maple, hickory—most of them are acceptable so long as they're small and fairly tender. Deer don't have the dentition of a beaver and they can't handle stuff they can't break off. So young trees, a couple feet tall and up to an inch in diameter, will have twigs and branches for deer to relish. But in 10 or 15 years it's different. The same brush patch is now a young forest. Crowns of the trees are closing in at the top and shading out low growing shrubs. The lowest limbs are out of reach to the tallest deer. The same plants that fattened deer a decade back are now weeds in terms of deer management. And returning the area to deer range means getting rid of the big stuff so you can bring on the same plants in younger growth stages.

"I guess about the best you can say is that a weed is not a type of plant; it's a point of view. Whether or not a plant is a weed depends on you. I was firmly reminded of that a few years ago while lavishing tender loving care on a new planting of multiflora rose. Old Jess, one of our farm laborers and a one-time hillside farmer, was assigned to mulch around the base of the two-year old planting. On checking Jess' progress a bit later, I found more straw hanging from the canes than there was at ground level. After explaining the how and why of the mulch, I inquired of Jess if this was the first time he'd ever done such a job."

He replied, "Well, yes and no. Always used to do it in my home garden—but I ain't never mulched briars before."

"And so, to some poets it might always be that 'A rose is a rose is a rose . . .' but to practical tillers of the soil, even a rose may be a weed if it's growing out of place."

Fishing out of a farm pond he built himself, M. B. "Buddy" Hall of Friendship holds 17 pounds of largemouth bass he caught in early January.

Divers ARE Ducks

By W. C. Goins

"SHOOT DIVING ducks?—not me", said Joe. "Before I engage in such a practice or maybe I should say malpractice I will quit duck hunting."

As I turned to Fred his face colored. "Only if there are never any more puddle ducks," he said.

Jim, it seemed, had a more practical viewpoint. "Yes," he replied to the same question, "I will shoot divers. I find them a lot of fun. They fly erratically, not like the slow-flying mallard and to me, the shooting is much more sporty. I might add that they are also more plentiful."

And so it goes. And so it will probably continue to go in the coming years when the lower extremity of the Mississippi Flyway System will see fewer and fewer of the puddle ducks.

Time was, and in recent years, too, when most of the duck hunters in Louisiana could pick the species they wanted to shoot. In certain areas of the marshland the hunter not only picked the species, which was mallard, but also the sex. He was proud of the fact, although he accepted it with little thought, that he only shot *greenheads* or the males of the mallard species. He, many times, could pass up those shots that would drop the greenhead too far from his blind where a marsh 'coon would hastily make off with the duck. Instead, he would only pick those that would fall nearby when the trigger was pulled.

From all reports which come from practically every parish of the state, the 1957-58 duck hunting season was about the poorest, when measured by hunter-success, that has been experienced in a long time. Of course, there were some exceptions, but for the most part, the mallard shooting was at its lowest ebb. The mallards that did migrate to Louisiana came very late in the season.

High water prevailed throughout the state for almost all of the season and this condition caused the ducks to be dispersed over a much larger area. Although some isolated areas found rather large concentrations of ducks there were many lakes, streams, and pot holes that saw no ducks to speak of.

In the marshland area of the state where the hunting is usually excellent, the hunters saw quite a change this past season. The small ponds where ordinarily, only puddle ducks were killed, saw increases of water depths which evidently, made them less attractive to these same species. Instead, the shooting on many of these ponds this past season consisted chiefly of diving ducks.

Another condition in the marshland area of the state detracted greatly from the hunter-success. This was the fact that thousands of divers concentrated offshore from the Louisiana coastline from one half to two miles out. Some flocks were seen resting as far out as 24 miles offshore. Game biologists assigned to waterfowl study and aerial survey point out that this latter is not a new condition but the fact that many of these same ducks did not fly into the marshes daily to feed *is* probably something new.

Another fact to consider, however, is that not many hunters in the coastal marshlands have concentrated their hunting efforts on the diving duck species. The mallard, in past years, provided plenty of shooting, was a beautiful duck, a trophy to be proud of, and also was very good on the table. Why should they bother about the other species?

James (Jim) Bryan, Gretna businessman, says, "Sure, I'll shoot diving ducks. They are a lot of fun and are plentiful enough to make the game interesting."

Somewhere between 15 and 20 years ago, each fall migration began to see fewer and fewer of the Canadian geese insofar as Louisiana was concerned. Where were they? They began to winter in areas north of the state. Today the situation is such that very few Louisiana hunters have the opportunity to bag a Canadian. Can the same thing happen with the mallard duck? It not only is possible but very probable.

It seems that the mallard has the ability and also, possibly the desire, to change his habits and this is especially true as far as feeding habits go. He may be found in many farm ponds throughout the country living in a domesticated state and eating grain along with chickens, turkeys and other kinds of fowl. While the average hunter is not literally taking the mallard out of the air to domesticate him at this time, the average farmer in the corn belts north of Louisiana is providing him with some choice wintering grounds and feed.

In past years the mallard joined with the other species of ducks common to the Mississippi Flyway System in the fall migration and were fairly plentiful in Louisiana by the first of November each year. The hunting season just past, however, saw very few mallards in the state until around the middle of December. These were in short supply, it may be added.

Where were the mallards? Some census checks showed a definite trend and this was to the effect that more and more of the mallards were wintering in the grain belt areas of the North and Middle West. One report covering the Dakotas showed large concentrations of mallards in those states late in the hunting season.

According to the U. S. Fish and Wildlife Service, the Dakotas are out of the Mississippi Flyway System but certain conditions there influence our duck populations.

The Service stated that on December 4, a total of 1,884,450 mallards were counted on the Missouri River in South Dakota from Yankton to the North Dakota line. This, they said, was an increase of more than 400% over the past two year average. Another report covers the week of December 2-7, and including the entire state of South Dakota, showed an estimated two and one-fourth to two and one-half million ducks, mostly mallards. On December 13 another survey showed 616,915 mallards in the state for an increase of 195% over the average of the past two years for that date.

A recent news release from the State of Nebraska showed a 100% increase in mallards in that state over last year's figures.

Taking these reports at face value, and considering the fact that according to the very favorable reports that were made during the nesting season which pointed out that the Mississippi Flyway System would, in the 1957-58 season, see as many ducks as in previous good years, two conclusions may be drawn. Until more evidence shall be forthcoming, however, we put them in the form of questions.

Is it possible that part of the mallards that ordinarily fly the Mississippi Flyway System shifted westward in search of grain and merged with the Central Flyway populations? Band returns may answer this in time.

Is it possible that the migration and feeding habits of the Canadian geese will be copied by the mallards using the Mississippi Flyway System? Indications point that way but only time will tell.

One fact has been established. The snowfalls or freezes that are of short duration have little effect toward moving out from northern states ducks that have found grain to feed on. The grain that is wasted by the use of mechanical pickers or harvesters seems to be of sufficient quantities as to provide the mallards with adequate feed and as long as this feed is available it is not likely that the mallards will migrate farther south.

As was pointed out in the beginning by Jim, the Louisiana duck hunter may have to change his hunting habits. In place of concentrating on the small ponds or pot holes in the marshland areas for mallards or other puddle duck species, he may find it more rewarding to hunt the deeper and more open lakes where the diving ducks are most plentiful.

"I'll raise your allowance a nickel — A DOLLAR —."

NUTRIA STORY

(Continued from Page 11)

septicemia are diseases which have been found to infect the nutria in some geographic areas.

External parasites such as protozoans, lice and worms may cause the fur of the animal to become worthless. Generally an insecticide will destroy the pests in a matter of days.

An internal parasite has been noted to cause coccidiosis; a form of blood shedding due to a protoaoan. Three groups of intestinal parasites are known to be destructive in some South American areas. The parasites fall in the groups or classes of nematodes, cestodes and tremetodes.

Whereas nutria are comparatively new on this continent, the "Ragondin" as it is called in France has been raised in captivity since it was introduced there in 1882 and its fur is familiar to the French people.

"Although at the present time there are very few nutria coats of any kind in existence, this rarity, it is believed, is due solely to the fact that women the world over have not learned of the beauty, luxury, comfort and serviceability of this unusual fur now in abundance in Louisiana", O'Neil says. "The nutria is a member of the beaver family and its fur is even more serviceable than the beaver or its little brother the muskrat.

"When the nutria pelt is properly taken and processed, it provides a fur as soft as mole skin, extremely light in weight and equally extremely durable. In addition, when properly processed, it lends itself to dye better than any other fur making it possible to produce fur garments of even, beautiful and lustrous pastel shades."

"More Louisiana women and girls are having nutria jackets and coats made from skins obtained locally and in every instance milady is extravagant in her praise of a garment manufactured of this fur."

Another allied industry that might add a million or more dollars to the fur industry would be the development of the processing end of the fur trade. Skins of all kinds, not only the nutria, could just as well be processed here if enterprising raw fur dealers would take the bit in their mouth and import and develop artisans in this trade instead of shipping our furs away to be processed, O'Neil says.

The most successful fur-farmers of nutria were the Germans. There it was found that one man could easily manage a large nutria farm because concrete pools and numerous labor-saving devices were installed to better the living conditions of the animals. Russia, Denmark and Great Britain have found some success in fur-farming with the nutria. In the United States various nutria "farms" have mushroomed. Most of them advertising "do-it-yourself" methods for purchasing pairs of nutria and becoming rich overnight. One "fur farm" is said to have advertised the animals for as high as $1,000 per pair promising almost immediate returns of $30 per pelt for the nutria. So far as it is known no nutria pelt has been sold for more than $9.00 on the fur market.

As regards agricultural damage by nutria, biologist Allan B. Ensminger of the Louisiana Wild Life and Fisheries Commission says in his report entitled "The Economic Status of Nutria in Louisiana": "It is easy to understand why rice is the most drastically effected of the agricultural crops utilized by nutria as food. The nutria being a semi-aquatic animal spends much of its life in or near water. Fields of rice flooded with water will naturally attract nutria as they furnish a ready food supply and plenty of water in which to swim. The most pronounced damage to rice production is the burrowing into and cutting of large irrigation canal levees. In most cases, the nutria that burrow into a levee are following and enlarging a burrow made by muskrats which are common in all of the canal systems in south Louisiana. Since the nutria is several times the size of a muskrat they naturally require a much larger tunnel to rest in. As the burrow is enlarged the chances of it becoming a break in the levee is much greater. Running water seems to attract nutria and quite a lot of digging activity is found about the pumping installations in rice fields. Constant vigilance is required of the farmer to detect burrows, dig them out and repair them.

The small water control levees throughout the rice fields which provide excellent resting sites for the nutria are often cut by the animals during the night allowing an entire rice field to wash out. When machines are used to repair levees quite a lot of rice is mashed down and lost; however, most of this type of damage can be averted by having a laborer check all of the small levees and repairing them manually each morning.

Young rice does not provide sufficient cover for daytime, or for the rodent's customary twilight feeding, therefore, most nutria activity is at night and concentrated along the large irrigation canals. As the rice crop develops, the nutria move out into the fields and remain there until the rice is harvested. Often several nutria are killed by the harvest crew as a field is being cut. Nutria utilize the stems of rice for about five (5) inches above the ground. It appears that an animal will cut in one place until a small opening of 10-15 feet is made. Any rice stems that are cut off below the water level usually die, while those cut off above the water will stool out and produce another top, however, this growth will not mature a seed head in time to be harvested when the field is cut.

The greatest damage to sugar cane occurs on the few cane plantations located along the northern rim of the marsh. Some of these fields have protection levees around them to keep high water in the marsh from flooding the sugar cane. Nutria have burrowed into and cut several of these levees allowing large fields to be flooded for a few days. This flooding causes a reduction in the cane yield.

Nutria will feed on the stalks of sugar cane and in some cases have cut the cane along the outer edge of a field in large enough spots to reduce the field's production for the season.

The Marshes of southwest Louisiana are broken by shell ridges that were once the beach of the Gulf. Corn is the principal crop on some of these inhabited ridges.

Nutria move out of the surrounding marsh at night and feed on the corn crop. Some damage has been caused to corn in areas outside of the marsh where nutria have moved inland along the larger streams of the state.

A few garden plants such as cabbage, lettuce, and peas are cut by nutria.

In a few cases nutria have burrowed and dug around highway bridges and culverts causing damage to the structures.

Another activity of the nutria which may become an important factor in Louisiana is the cutting of small hardwood trees. This condition is especially important where trees are planted around a camp site in the marsh.

Much of the criticism of nutria in marshes where muskrats were being produced may not be justified. No doubt nutria and muskrat do compete for some food plants but the muskrat is more of an underground feeder, rarely feeding on vegetation above the ground surface. whereas nutria feed mainly on the stems of vegetation above the ground surface. As the vegetation grows, only the basal part of the plant is used. Eat-outs, a condition quite common in our marshes, caused by nutria are unlike those of muskrat, where the root stock is completely destroyed. An eat-out caused by nutria may be revegetated in one season whereas a muskrat eat-out may take 8-10 years, therefore, it is easily seen that a nutria eat-out is only a temporary opening up of the marsh vegetation.

At first it was believed that nutria would fight with muskrats but this appears to be untrue, as abundant nutria and muskrat sign can be found in areas where the two animals are found together. It seems to be unlikely that there is any social conflict between nutria and muskrat. Possibly the greatest damage caused in muskrat marshes by nutria is the hastening of eat-outs and the increased trouble during the trapping season. Many small nutria are taken by the trapper which would make undersized pelts and are subsequently discarded. A number 2 trap is needed to satisfactorily trap nutria, whereas a number 1 is used for muskrat. Nutria pelts require several times as much care and attention as muskrat. After the animal is skinned the pelt then has to be fleshed or scraped. This process required about 5-10 minutes depending on the trappers' ability. Nutria pelts are stretched on a metal mold to dry. Two days are required to properly dry the pelts. It is probable that most of the criticism of nutria was due to increased labor in trapping. With new methods for fleshing and drying, most trappers became satisfied with trapping nutria.

In several marshes being managed for waterfowl production, nutria have been found to be of value in opening up stands of dense vegetation, thus making natural ponds throughout the marsh, and permitting duck food plants to become established. Millet is one of our best duck foods which will invade a marsh opened up by nutria.

The grazing of cattle in the marsh has become increasingly important in the last few years. There is some direct competition for food between cattle and nutria but the main damage caused by nutria to cattle marshes is the opening up of the marsh and making it difficult and in some cases impossible to burn off the old dead vegetation. As fire is the principle management tool in marsh management, this condition can be very bad for the proper management of a marsh regardless of the manager's aim.

Since the introduction of nutria into Louisiana there has been a lot of stocking of nutria into farm ponds and lakes over the state and into east Texas for the purpose of removing undesirable aquatic vegetation and weeds. Improper construction with shallow water areas is usually responsible for the presence of weeds, therefore, nutria at best are only a temporary respite from the trouble. Very little has been gained from stocking nutria in ponds and lakes other than the satisfaction of seeing a few cattail and cut grass clumps removed from the pond margin."

Many people regard the nutria as a predator and demand that it be treated as injurious. Up till now the law has exempted it from this category and in the marsh it is subject to the same regulations applying to other fur bearing animals. It cannot be trapped except during the regular trapping season and may not be taken with a firearm. However, there is one exception to this law which protects all fur-bearing animals in the state. If the nutria are inflicting sufficient damage on a landowner's property he may apply to the Law Enforcement Division of the Louisiana Wild Life and Fisheries commission and a game agent will be sent out to the location to inspect the damage. If the complaint is warranted the landowner will be issued a special permit by the Fish and Game Division and he will be allowed to do away with the intruders by trapping or the use of firearms. However, in no case will he be allowed to eat the flesh of the animals or make any use whatever of the pelt."

So—If you should happen to run across an animal that has teeth like Bugs Bunny and looks like a king sized guinea pig don't be astonished—it's a nutria and you may find him anywhere. Someone even ran across a pair near the Canadian border. Furthermore his front and back feet won't match. Up forward, Mr. Nutria has a pair of paws like a coon and aft, his feet are webbed. He's a vegetarian and eats practically anything in that line . . . and if you should happen to take your eyes off him, that is her, don't do a double take because there'll probably be a half dozen more running around . . . Mrs. Nutria multiplies and compounds semi-annually.

Deer can find good browsing on released plants after cutting.

HARDWOOD MANAGEMENT

(Continued on Page 3)

years or even less may be expected to provide forage for deer, yet maintain sufficient open woods to be attractive to turkey and squirrel. A. F. Schulz found on the Fernow Experimental Forest in West Virginia, that more browse was available two years after cutting where not to exceed forty percent of the gross volume had been removed together with girdling of defective trees, as compared to heavier cutting.

Under the pressure of today's hunting public, there is a tendency to jeopardize future habitat for the sake of present game populations. This is particularly true concerning silvicultural operations carried on for improving forest stand composition and structure. Within 15 years over a million more hunters will be seeking shooting opportunities than at present and mediocre forest habitat now being managed for game will not support populations required for this increase in pressure, even though it now appears to be sufficient.

A continuing game program to meet increased gunning pressure cannot be sustained on cull and unthrifty forests; to attempt to do so is only putting off the evil day of reckoning and dodging the responsibilities of resource management.

There is no royal road in today's game management program. We are working in a large measure with forests which have been culled over for the past hundred years or more. It may take an equal or longer period of intensive management to build up site capability so as to support desirable hardwood forests. Nevertheless, it is our responsibility to develop these residual stands into habitat that will not only satisfy today's sportsmen, but also set the stage for game harvest by increased populations in the years to come, as well as meet consumer demands for forest products. If, in order to fully develop future habitat, it is necessary to compromise present populations, such decision is in the public interest and should be made. To support shootable populations during the conversion period, techniques should be explored to supply required food and cover, which although possibly not desirable as a long time operation, will lend the necessary habitat supplement for the present.

Food patch development, a proven technique of intensive game management, could be utilized in areas where a critical food supply is created by stand improvement operations. An agricultural program has a definite place in supplementing natural game food abundance. Hans Uhlig, in a bulletin issued by the Conservation Commission of West Virginia, found that fox squirrels inhabiting forests near corn fields usually average larger litters than in other areas.

Waterfowl for years have been managed on the basis of marsh and aquatic techinques; recently as a necessity techniques have been developed utilizing agricultural methods which have resulted in accommodating thousands of waterfowl on lands formerly considered worthless for this purpose. The use of green tree reservoir techniques for waterfowl make available a dependable food supply in the forest without dependence on rainfall or overflow. There is no doubt but that an agricultural supplement can be used to support shootable game populations during a forest conversion period.

The principle requirements of hardwood forest habitat for multiple wildlife species may be considered as follows: (a) A mature overstory providing mast and dens. (b) A thrifty understory of palatable browse and desirable reproduction. (c) Forage and game food plants in the ground cover. (d) Available water. How well these requirements are met depends on ability to improve growth, composition and structure of the forest rapidly, while at the same time giving recognition to critical habitat shortages and improvising supplemental measures to carry the game through critical periods.

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WE'RE PLURAL, BUD!

What is the plural of shrimp, "shrimp' or "shrimps"? Harry Hansen, book reviewer and syndicated columnist, once explained it this way: When the word refers to shellfish, the plural is "shrimp." When it refers to men, the plural is "shrimps."

Springtime

—Photo by Steve Harmon

Relax in lovely Louisiana and live longer